

**STATE FOREST LAND
ENVIRONMENTAL CHECKLIST**

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **Rudolph** *Agreement #:* **75774**

2. Name of applicant:

Department of Natural Resources

3. Address and phone number of applicant and contact person:

Northwest Region **Contact Person: Candace Johnson**
919 North Township St. **Telephone: (360) 856-3500**
Sedro Woolley, WA 98284

4. Date checklist prepared:

12/23/03

5. Agency requesting checklist:

Department of Natural Resources

6. Proposed timing or schedule (including phasing, if applicable):

- a. *Auction Date:* **2/28/05**
b. *Planned contract end date (but may be extended):* **9/30/06**
c. *Phasing:* **Does not apply.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
Yes.

Timber Sale

- a. *Site preparation:* **None currently planned.**
b. *Regeneration Method:* **Hand plant with conifer seedlings within the first 2 years of harvest.**
c. *Vegetation Management:* **Hardwood saplings may be hand slashed 5 to 7 years after harvest.**
d. *Thinning:* **Precommercial thinning will be assessed in 10 to 15 years. A commercial thinning is possible in 25 to 45 years.**

Roads:

4,006 feet of newly constructed road will be abandoned after timber sale is completed. 3,329 feet of newly constructed road will be used for a future sale in the vicinity. Required routine road maintenance on the haul route will be conducted at periodic intervals.

Rock Pits and/or Sale:

The two existing rock pits that will be used for this proposal will be used again in the future when new roads are constructed in the area. See A.11.c for locations of rock pits.

Other: None.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒ 303 (d) – listed water body in Watershed Analysis unit (WAU): ☒temp ☐sediment ☐completed TMDL (total maximum daily load):

The enclosed department GIS map shows two 303d listed waters in the vicinity of the proposed Rudolph timber sale. Right-of-way harvesting for new road construction drains into tributaries that feed Coal Creek. This area of right-of-way harvesting is approximately one acre. Coal Creek feeds into Skiyou Slough, just north of the Skagit River. Both Coal Creek and Skiyou Slough are 303d listed waters for temperature. All streams are tributaries of the Skagit River. Contact the DNR Northwest Region office or <http://www.ecy.wa.gov/programs/wq/303d> for more information.

☐Landscape plan:

☒Watershed analysis: Hansen Creek Watershed Analysis, 1994

☐Interdisciplinary team (ID Team) report:

☒Road design plan: Rudolph Road Plan, available at the NW Region office.

☐Wildlife report:

☐Geotechnical report:

☐Other specialist report(s):

☐Memorandum of understanding (sportsmen’s groups, neighborhood associations, tribes, etc.):

☒Rock pit plan: See Rudolph Road Plan, available at the NW Region office.

☒Other: Forest Resources Plan Environmental Impact Statement, July, 1992; Habitat Conservation Plan, September, 1997.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No known government applications are pending.

10. List any government approvals or permits that will be needed for your proposal, if known.

☐HPA ☐Burning permit ☐Shoreline permit ☐Incidental take permit ☒FPA # _____ ☐Other:

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Approximately 89 acres were evaluated for harvest with this proposal. Approximately 15 acres will remain unharvested in riparian/slope stability buffers. An additional one acre will remain unharvested in two different leave tree patches. The remaining 73 acres will be harvested by even-aged methods in one unit. An additional four acres will be cleared to make way for new road construction to access the unit.

Estimated Volume: 3,017 MBF

Net harvest area: 73 acres in timber sale unit, four acres of Road Right-of-Way (ROW)

Largest unit: 73 acres

Landings: 4

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Type of harvest: Even-aged regeneration harvest

Logging system: Cable

Pre-harvest description: The proposed harvest unit is located within a mixed conifer stand that seeded in naturally approximately 60 years ago. The northern third of the unit is dominated by western hemlock, with approximately 245 trees per acre that reach heights up to 100 feet and diameters up to 25 inches. There are also approximately 26 western redcedar per acre that reach heights up to 84 feet and diameters up to 18 inches. The lower two-thirds of the unit is predominately mixed conifer and generally includes the larger Douglas fir, western hemlock and western redcedar trees found in the unit. There are approximately 10 Douglas-fir trees per acre that reach heights up to 145 feet and diameters up to 38 inches. There are approximately 121 western redcedar trees per acre that reach heights up to 110 feet and diameters up to 30 inches. There are approximately 96 western hemlock trees per acre that reach heights up to 115 feet and diameters up to 25 inches. Pockets of red alder trees are mixed in with the conifer. Understory vegetation is sparse, with swordfern dominating in the conifer portions and salmon berry in the hardwood pockets.

Overall unit objectives: Objectives for the Rudolph timber sale are to generate revenue for the Skagit County Forest Board Trust, to protect the water quality of several streams in the vicinity, and to convert the western hemlock-dominated portions of the stand into a more valuable mixed conifer stand.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Two existing rock pits will be developed with this proposed timber sale. The first pit is at milepost 0.25 on the HO-2010 road in Section 2, Township 35 North, Range 6 East, in the Alder WAU. This pit will generate ballast. The second pit is at milepost 1.1 on the HO-2490 road in Section 36, Township 36 North, Range 7 East, in the Grandy WAU. This pit will generate shot rock and riprap. If other on-site rock sources are discovered during road construction, they may be developed. Rock may also be purchased from privately owned rock pits or hauled from other existing pits on state land. Road work associated with the proposed timber sale is summarized below.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		7,335	2.7	0
Reconstruction		0		0
Abandonment		4,006	1.5	0
Bridge Install/Replace	0			0
Culvert Install/Replace (fish)	0			0
Culvert Install/Replace (no fish)	27			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map. See also color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under “SEPA Center.”)
- a. Legal description:
Unit: Township 36 North, Range 5 East, Section 35
ROW: Township 36 North, Range 5 East, Sections 35 and 34
See A11c for rock pit locations.

b. Distance and direction from nearest town (include road names):
The Rudolph timber sale is approximately five miles north and east of the town of Sedro Woolley. Access is off State Highway 20 and the C-1000 forest road. Please see question B.14. and the enclosed vicinity map for more detail regarding road numbers.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under “ SEPA Center.”)

WAU Name	WAU Acres	DNR Managed Acres	Proposal Acres
Hansen Creek	28,432	4,279	77
Sub-basin Name	Sub-basin Acres	DNR Managed Acres	Proposal Acres
Wiseman	3,171	1,784	76
Coal Creek	1,707	520	1

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under “SEPA Center” for a broader landscape perspective.)
- This proposal is located on the south flank of Lyman Hill within the Hansen Creek WAU. All streams in the vicinity are tributary to the Skagit River. There is a completed watershed analysis for the Hansen Creek WAU. This analysis reports that, of the 28,432 acres within the WAU, approximately one-half of the area is managed as commercial forest land, while the other half consists of agricultural land and rural residential development.

The table below reports recent timber harvest activity within the last seven years, on Department lands, as well as future expected timber harvests on Department lands for the next year. The same chart also reports recent past harvesting on private lands, but no attempt was made to predict future timber harvests on private land. Data for Department and private harvests were compiled from the Department’s GIS database and Planning and Tracking system, as of November, 2003. The attached WAU map created in December, 2003 shows the location of Department and private harvest activity.

NAME OF WAU	DNR ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS + SOLD TIMBER SALES NOT HARVESTED YET (WILL BE EVEN AGED HARVESTING)	DNR ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS	DNR EXPECTED HARVEST ACRES WITHIN THE NEXT YEAR	PRIVATE ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	PRIVATE ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS
Hansen Creek	928	0	124	2,526	1,608

The watershed analysis lists the following impacts to watershed resources as a result of past timber harvesting: elevated stream temperatures due to lack of riparian forest, lack of coarse woody debris in streams, and high sediment supply in streams. Although the watershed has been extensively logged, the analysis determined that the WAU was not sensitive to increased peak flows since a relatively low percentage of the WAU is in the rain-on-snow zone.

This timber sale has been designed to mitigate potential impacts described above and is not expected to result in significant cumulative impacts to watershed resources. The Rudolph timber sale, as well as other recently sold and planned Department sales in the Hansen Creek WAU, have or will meet or exceed the requirements of watershed analysis prescriptions relating to protection from mass wasting, reducing surface erosion from roads, and retaining timber in riparian areas to provide adequate shade and down woody debris recruitment. All road construction will meet or exceed watershed analysis prescriptions in the Hansen Creek WAU for requirements relating to revegetation of exposed soils, immediate ballasting of newly pioneered subgrade and the size and spacing of drainage structures to control runoff.

The Department’s Habitat Conservation Plan (HCP) outlines strategies to protect all Federally listed threatened and endangered species, and species that are in danger of being listed in the future, as well as uncommon habitat types found on forest lands in western Washington. HCP prescribed riparian and slope stability buffers intended to protect salmon and trout habitat were applied to the Rudolph timber sale and will be applied to all future sales in the vicinity. HCP riparian and slope stability buffers, ranging from 15 to 150 feet address the stream shading and down woody debris recruitment issues raised in the Hansen Creek WAU.

The HCP identifies large, structurally unique trees and snags as uncommon habitats that need to be protected. An average of 11 trees per acre will be left after harvest on the Rudolph timber sale. These trees will function for future snag and large structurally unique tree recruitment. Future timber sales in the block will follow HCP strategies regarding snag, and large structurally unique tree retention. No particular species or habitats designated for protection by the HCP are found in the vicinity of the Rudolph timber sale.

The Rudolph timber sale, in combination with future expected sales in the WAU, could cause changes to the viewshed from State Highway 20 in the vicinity of Sedro Woolley and Lyman. HCP strategies for leave tree retention and riparian and slope stability buffers will help to mitigate these impacts. No other mitigation is planned.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☒Mountainous, ☐Other:

- 1)

General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Hansen Creek WAU is located in Townships 35 and 36 North, Ranges 5 & 6 East in Skagit County. The WAU consists of 28,432 acres on the south flank of Lyman Hill and the west edge of Josephine Ridge. Elevations range from near sea level to 4,046 feet on Lyman Hill. Annual precipitation is 40 to 90 inches and occurs predominantly as rain. The general aspect is southwest and south. Most of the WAU is within the western hemlock zone where late seral stages (climax species) are dominated by western hemlock and western redcedar and early seral stages (pioneering species) are primarily Douglas-fir and hardwood. Upper elevations (greater than 3,000 feet) are dominated by western hemlock and Pacific silver fir. Ages in the WAU are one to 90 years. The south flank of Lyman Hill contains numerous large hardwood stands, primarily of red alder, black cottonwood and bigleaf maple.
- 2)

Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

None.

b. What is the steepest slope on the site (approximate percent slope)?
The steepest slopes within the proposed harvest unit boundaries are 90% over approximately 0.25 acres.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
9162	Gravelly Silt Loam	30-65	18	Medium	Medium
4790	V. Gravelly Loam	30-65	43	Low	Medium
7439	V. Gravelly Silt Loam	30-65	12	Medium	Medium
9162	Gravelly Silt Loam	30-65	3	Medium	Medium
4790	V. Gravelly Loam	30-65	1	Low	Medium

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.
Yes.

- 1)

Surface indications:

Yes. Indications of previous debris flows can be seen over an area of about three acres in the inner gorge for the type 4 stream along the northeast harvest unit boundary. Approximately 1,200 feet downstream on the same type 4 is an area where the east side of the channel has moved, leaving an area of exposed soil approximately 0.2 acres in size. The type 4 stream, which forms the west timber sale boundary, is in an incised channel. The entire channel shows areas of bank erosion that add up to approximately 0.5 acres. Also along portions of three type 5 streams that fit incised channel definitions, areas of soil movement were observed. These areas add up to 0.49 acres.
- 2)

Is there evidence of natural slope failures in the sub-basin(s)?

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

The Hansen Creek Watershed Analysis indicates there are 221 areas of mass wasting. This analysis reports that,

“ Mass wasting events are limited to that portion of the WAU north of State Highway 20. Inventoried failures occurred across all elevation zones (500 foot increments) and in all sub-basins. Nearly 80% of all inventoried failures occurred in three landforms: inner gorges, incised stream channels, and glacial terrace escarpments, all of which are sensitive to forest management activities. Failures also seem more numerous in convergent, concave topography at mid- to upper-elevations of sub-basins affected by large, ancient failures...”

“ Failures are common throughout the mountainous portion of the watershed on over-steepened inner gorge areas and along incised stream channels. Debris torrents typically originate in stream channels with gradients steeper than 20%...”

“Shallow-rapid landslides and debris torrents are the dominant mass wasting processes in the watershed. Nearly 95% of the inventoried failures involved shallow-rapid landslides and debris torrents. Other processes include sporadic deep-seated, gullying and stream channel destabilization. Large scale ancient failures involving bedrock and/or till affected significant portions of the middle to upper elevations of the watershed. However, the basic stability of these features does not appear to be affected by forest management activities.”

Five of the 221 slope failures inventoried occurred in old-growth timber, and can be considered natural slope failures. Fifty-seven of the inventoried slope failures occurred in timber that was 50 years old or greater. Some of these failures may also be natural, but the watershed analysis did not make that determination.

- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Associated management activity:

Please see question B1d2 above.

The watershed analysis surmises that "... forest management activities have had an adverse effect on hill slope and stream channel stability. Two-thirds of all failures were either road related (27%) or associated spatially with other activities (39.5%) in areas harvested less than 50 years prior to failure."

Since the majority (95%) of slope failures were shallow, it can be assumed that a very high majority of slope failures associated with harvest and road construction activities were shallow in nature.

The watershed analysis does not break down slope failures due to human activity by sub-basins.

- 4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?

☐No ☒Yes, describe similarities between the conditions and activities on these sites:

At station 33+96 on the proposed CC-1000 road, the new road construction crosses a type 4 stream that meets watershed analysis definitions of an incised channel and has shown signs of bank slumping. A previous crossing at station 28+04 meets the watershed analysis definition of an incised channel, but has no surface indications of instability.

- 5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

The boundary for the timber sale and the location of all new road construction has been carefully placed to avoid any harvest activity on areas with potential instability, except for one stream crossing at station 33+96. At this location on the CC-1000 road, the new road construction crosses a type 4 stream that meets watershed analysis definitions of an incised channel and that has shown signs of bank slumping. Mitigation measures proposed at this stream crossing include: a dipped, shot rock fill with keyed riprap at the inlet and outlet; armored cutbanks and grass seeding of newly exposed soils; relief culvert cross drains installed within 50 feet of the stream crossing; a culvert sized to withstand a 100-year flood event; and no side casting into the mass-wasting unit will be allowed. A crossing at station 28+04 meets the watershed analysis definition of an incised channel, but has no surface indications of instability. A shot rock fill will be utilized at this location. A detailed road plan is available upon request at the Department's NW Region office.

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 2.7 Approx. acreage new landings: 3 Fill source: Native material and rock from existing rock pits will all provide construction materials for new roads and landings.

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Yarding and road construction during periods of heavy rainfall could cause localized erosion.

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*
No portion of the site will be covered with impervious surfaces, however, 1.5 acres of new road construction will be permanent, gravel road after completion of the project.

- h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)
**All watershed analysis prescriptions will be followed for timber harvesting and road construction. From November 1-March 31, no road construction will be permitted. From November 1 to March 31 yarding operations, timber and rock hauling, and maintenance activities will not be allowed unless the contract administrator approves a plan, submitted by the operator that will provide adequate protection to surface waters. Grass seeding of newly exposed soils from the construction of roads and landings will occur shortly after completion of these activities. Cross-drain culverts with catch basins and rock head walls at culvert inlets and rock energy dissipaters at outlets will be maintained. A total of 4,006 feet of road will be abandoned after harvesting is completed. All logs will have the lead-end suspended during yarding operations.
See B.3.1.b+c and B.1.d. 5.**

2. Air

- a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.
No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by truck traffic.
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
Does not apply.
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
None. If slash is burned, it will be burned in adherence to the State's Smoke Management Program.

3. Water

- a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

Yes.

- a) *Downstream water bodies:*

All streams associated with the proposed Rudolph timber sale flow into the Skagit River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed Stream	4	3	100 – 150’
Unnamed Stream	5	3	0-15’
Unnamed Stream	5	7	none

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

Six type 4 streams are located in the general vicinity of the Rudolph timber sale. The chart above shows those type 4 streams that required buffers because of their proximity to the proposed timber sale. One of the type 4 streams has buffer width segments of between 100 and 150 feet. Stream buffers in excess of the HCP requirements have been implemented to protect inner gorges and concave slopes with signs of instability.

Ten type 5 streams are located in the general vicinity of the Rudolph timber sale. Three of the ten type 5 streams have small, no-harvest buffers at six places where incised channels are located. These no-harvest areas, which add up to 0.49 acres, have been implemented to minimize soil disturbance inside incised channels as identified in the watershed analysis.

An additional four type 4 streams and three type 5 streams will be crossed with new road construction. These streams are not listed in the table above, but are shown on the timber sale map.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐No ☒Yes (See RMZ/WMZ table above and timber sale map.)
Description (include culverts):

Timber harvesting will occur within 200 feet of type 4 and 5 streams. Streams not protected with RMZ’s may be yarded over. If possible, where timber is harvested adjacent to type 5 streams, logs will be felled and yarded away from these streams. Lead end suspension of logs will be required when type 5 streams are yarded over.

New road construction will cross five type 4 streams, and six type 5 streams.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
None. Culverts will be placed at streams crossings so that no fill will be placed directly into the water.
- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)
☒No ☐Yes, description:
- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒No ☐Yes, describe location:
- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒No ☐Yes, type and volume:
- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

The Department’s GIS database reports the following surface erosion and mass wasting potentials in the sub basins:

Sub-basin Analysis Area	% w/ moderate mass wasting potential	% w/ high mass wasting potential	% w/ moderate surface erosion potential	% w/ high surface erosion potential
Coal Creek	34	11	52	11
Wiseman Creek	67	3	74	3

Please see question B.1.d.2.

The watershed analysis for this WAU indicates that the landforms that are susceptible to mass wasting are: glacial terrace escarpments, inner gorges, incised channels, and concave/convergent topography. Inner gorges and incised channels are found in both sub-basins. Concave/convergent topography is found in both sub-basins. Glacial terrace escarpments are not found in either sub-basin. Inner gorges and incised channels can be found adjacent to tributaries that directly feed into Wiseman Creek and form boundaries for the Rudolph timber sale. Many of the small tributary streams that feed into Wiseman Creek flow through incised channels. A small area of concave convergent topography, identified by the watershed analysis, exists at the northeast timber sale boundary. Landslides from these landforms have in the past, and would in the future, deposit a high proportion of eroded material into surface waters.

The watershed analysis indicates that most of the northern half of the WAU has a moderate soil erosion potential. This area includes the north three-quarters of both sub-basins. High soil erosion potential areas exist on steeper slopes in the headwaters of Coal Creek and within the concave features found in the upper elevation sections of Wiseman Creek. Additional areas of high soil erosion are mapped along Coal and Wiseman Creeks at mid-elevations, before these streams drop into the lower Skagit Valley.

A high proportion of the high soil erosion potential areas could deliver sediment to streams. Where streams intercept the moderate soil erosion potential areas, a high proportion of eroded material could also enter streams during large storm events. This situation occurs in the headwaters of Coal Creek.

- 8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐No ☒Yes, describe changes and possible causes:
Please see question B.1.d.2. The watershed analysis indicates that within the WAU, the Hansen Creek drainage has experienced multiple landslides on the railroad era logged slopes in the upper basin in 1948. These events led to extensive channel widening in some segments of Hansen Creek. The analysis also states, "The pattern of disturbance in Hansen Creek is repeated in most of the major tributaries to some degree. General trends show fan segments responding to sediment pulses from upstream mass wasting by extreme channel widening. Rarely does the disturbance visually propagate down to the lowest segments." Channel widening and sediment deposition were observed in Coal and Wiseman Creeks.
- 9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☒No ☐Yes, explain:
The proposed harvest activity will have little affect on stream and water quality. No harvest or road building activity will take place in areas of potential instability with the possibility of delivering sediment to streams, except for one crossing on the CC-1000 road at station 33+96. Watershed analysis prescriptions will be followed that help mitigate the impacts from road construction and this crossing will be abandoned after timber harvesting is completed. A previous crossing at station 28+04 meets the watershed analysis definition of an incised channel, but has no surface indications of instability. Buffers protecting type 4 streams and some segments of type 5 streams, and road building standards will minimize any impacts to water quality.
- 10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)? Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?*
☒No ☐Yes, describe:
According to the Department's GIS database, dated November 4, 2003, the following road miles per square mile are given:
Hansen Creek WAU: 4.2

Wiseman Creek: 3.2 Coal Creek: 4.5
- 11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☐No ☒Yes, approximate percent of WAU in significant ROS zone.
Approximate percent of sub-basin(s):
Hansen Creek WAU: 22% in ROS

Wiseman Creek: 48% in ROS (76 acres of proposed timber sale in Wiseman Creek sub-basin)
Coal Creek: 47% in ROS (1 acre of proposed timber sale in Coal Creek sub-basin)
- 12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*
Interpretation of 2001 aerial photos and local knowledge revealed the following estimations of hydrologic maturity:
Wiseman Creek: 89% hydrologically mature
Coal Creek: 86% hydrologically mature
- 13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐No ☒Yes, describe observations:
The watershed analysis did attribute changes to stream channels to peak flows. These changes are typically sediment deposition in low gradient streams and bank erosion in higher gradient streams that do not have a bedrock structure. These changes were not broken out by sub-basin. In this particular situation it is very difficult to separate out the effects of peak stream flow increases from the effects of mass wasting events. They are interrelated.
- 14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*
The watershed analysis identifies hydrologic impacts from forestry activities as low throughout the WAU. This proposal is expected to have little to no impact on peak flows. The watershed analysis indicates that the WAU has a low sensitivity to peak flows due to the relatively small proportion of the WAU located in the peak rain-on-snow zone. The watershed analysis assigned a low sensitivity rating from peak flows to fish habitat. This entire proposal (77 acres) is within the rain-on-snow zone.
- 15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒No ☐Yes, possible impacts:
- 16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*
Increased peak flows are not expected as a result of this proposal (see B.3.a.14). Measures to reduce or control erosion during peak flow events are listed in B.1.h.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.
Channelized water through ditches and culverts emptying out onto the forest floor will increase surface saturation in localized areas, but is not expected to affect ground water.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
Insignificant amounts of oil and lubricants could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed of on site.
- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☒No ☐Yes, describe:
- a) *Note protection measures, if any.*
None.
- c. Water Runoff (including storm water):
- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.
Storm water runoff will be collected by landings, road surfaces and ditches, then diverted through cross drain culverts onto the forest floor. Culverts will be placed to minimize the amount of ditch water entering existing streams.
- 2) Could waste materials enter ground or surface waters? If so, generally describe.
It is unlikely that any waste materials could enter any surface or ground water.
- a) *Note protection measures, if any.*
None.
- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)
Please see question B.1.h.

4. Plants

- a. Check or circle types of vegetation found on the site:
- ☒deciduous tree: ☒alder, ☐maple, ☐aspen, ☒cottonwood, ☐western larch, ☐birch, ☐other:
☒evergreen tree: ☒Douglas fir, ☐grand fir, ☒Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine,
☐western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☒Sitka spruce,
☐red cedar, ☐yellow cedar, ☐other:
☒shrubs: ☒huckleberry, ☒salmonberry, ☐salal, ☒other: **swordfern**
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☐skunk cabbage, ☒devil's club, ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐plant communities of concern:
- b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)
Approximately 3.0 million board feet of hardwood and conifer timber will be removed from the site. This represents approximately 90% of the timber volume within the sale area. Understory vegetation will be disturbed, but is expected to remain present on the site.
- 1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")*
- The proposed harvest unit is bordered on the north by a Douglas-fir stand approximately eight years old and 41 acres in size. The stands located to the east and west of the proposed harvest area are mixed conifer stands (Douglas-fir, western hemlock and western redcedar) that are approximately 60 years old. The stand to the west is approximately 110 acres and the stand to the east is approximately 54 acres. The stand to the south is a privately owned conifer stand approximately 60 years old and 25 acres in size. The forest stands that are on the west, south and east sides of the proposed timber sale are similar in structure and composition to Rudolph. Please see question A.11.b. for a pre-harvest stand description.**
- 2) *Retention tree plan:*
- An average of eleven retention trees per acre (total of 814) will be retained. The majority of the retention trees have been placed in irregular, snake-like patterns, radiating out from the landings. Small clumps or concentrations of trees have been placed along these irregular lines where concentrations of trees with desired wildlife habitat qualities were found. Two leave tree patches were left that total one acre in size. The first leave tree patch protects a large (60+ inch diameter) snag. The second leave tree area captures some dominant Douglas-fir trees while reinforcing a protective buffer for an unstable area at a type 5 stream. Please see the timber sale map for placement of clumps inside the unit. The trees counted for retention are from the dominant and co-dominant class. The retention trees will help provide irregular patterns and future complex structures for the stand and will provide current and future wildlife benefits. Trees selected for retention were often irregular and defective, large trees that have future snag producing qualities. Overall, very few snags were found in the unit.**
- c. List threatened or endangered *plant* species known to be on or near the site.
None are known at this time.

- c. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
d.

Approximately 15 acres of forest will be left unharvested in riparian and slope stability buffers. An additional one acre will be retained in leave tree patches. Eleven trees per acre will be left after harvest. Conifer seedlings will be planted within two years of harvest. Please see question B.4.b.2.

5. **Animal**

- a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☐hawk, ☐heron, ☐eagle, ☐songbirds, ☐pigeon, ☒other: **Barred Owl, Raven**
mammals: ☒deer, ☒bear, ☒elk, ☐beaver, ☒other: **Bobcat**
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐talus slopes, ☐caves, ☐cliffs, ☐oak woodlands, ☐balds, ☐mineral springs

- b. List any threatened or endangered species known to be on or near the site (*include federal- and state-listed species*).
All streams in the vicinity of this proposal are tributary to Wiseman Creek and Coal Creek. Both creeks are tributaries to the Skagit River. Chinook salmon can be found in the lower reaches of Wiseman Creek and Skiyou Slough, which is fed by Coal Creek. Puget Sound Chinook salmon are listed as threatened. Coho salmon, which are a state candidate for listing, can also be found in the lower reaches of both Wiseman and Coal Creeks. Neither the DNR TRAX system nor the PHS database indicates any other known endangered or threatened species.

- c. Is the site part of a migration route? If so, explain.
☒Pacific flyway ☐Other migration route: *Explain if any boxes checked:*
All of Washington State is considered part of the Pacific Flyway. No impacts are anticipated as a result of this proposal being completed.

- d. Proposed measures to preserve or enhance wildlife, if any:

1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*
Species/Habitat: Fish Habitat **Protection Measures: stream protection described in B.1.d.5., B.3.a.1.b. and c., B.3.a.2., and B.1.h.**

Species/Habitat: Mature Forest Structure **Protection Measures: Retention tree plan described in B.4.b.2.**

6. **Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc.
Does not apply.
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
Does not apply.
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
None.

7. **Environmental Health**

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
- 1) Describe special emergency services that might be required.
Does not apply.
- 2) Proposed measures to reduce or control environmental health hazards, if any:
None.
- b. Noise
- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
None.
- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.
Noise from log trucks and logging equipment will be present while operating during daylight hours.
- 3) Proposed measures to reduce or control noise impacts, if any:
None.

8. **Land and Shoreline Use**

- a. What is the current use of the site and adjacent properties? (*Site includes the complete proposal, e.g. rock pits and access roads.*)
Timber Production.
- b. Has the site been used for agriculture? If so, describe.
No.
- c. Describe any structures on the site.
None.
- d. Will any structures be demolished? If so, what?
Does not apply.
- e. What is the current zoning classification of the site?
Industrial Forestry.

- f. What is the current comprehensive plan designation of the site?
Industrial Forestry.
- g. If applicable, what is the current shoreline master program designation of the site?
Does not apply.
- h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.
No.
- i. Approximately how many people would reside or work in the completed project?
Does not apply.
- j. Approximately how many people would the completed project displace?
Does not apply.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
Does not apply.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The design of this project is consistent with current comprehensive plans and zoning regulations.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None.
- c. Proposed measures to reduce or control housing impacts, if any:
None.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?
Does not apply.
- b. What views in the immediate vicinity would be altered or obstructed?
 - 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☐ No ☒ Yes, viewing location:
Portions of this proposed sale will be visible to residents of the town of Lyman.
 - 2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☐ No ☒ Yes, scenic corridor name:
The proposed sale area will be visible from Highway 20.
 - 3) *How will this proposal affect any views described in 1) or 2) above?*
The proposed timber sale is located on the south flank of Lyman Hill where numerous timber stand age classes, including recent even-aged harvests, are visible. The unit is visible from Highway 20. Mature forests (greater than 60 years) are on the west, south and east sides of the proposed timber sale boundary. Stands that are approximately eight years old are located on the north side of the proposed timber sale boundary.
- c. Proposed measures to reduce or control aesthetic impacts, if any:
A total of 814 leave trees in clumps and in irregular lines are left within the proposed harvest boundary. These leave trees, along with RMZ buffers, will help to mitigate the aesthetic impacts as viewed from Highway 20.

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Does not apply.
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
Does not apply.
- c. What existing off-site sources of light or glare may affect your proposal?
Does not apply.
- d. Proposed measures to reduce or control light and glare impacts, if any:
None.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
Hunting, fishing, horse riding, hiking
- b. Would the proposed project displace any existing recreational uses? If so, describe:
No.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
None are known at this time.
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
None.
- c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)
None.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

From the sale area, access is over the CC-1000 (CP-180) to HWY 20 at Coal Creek. One gravel pit is accessed over the HO-2010 to the HO-2000 to the Medford Road. The east HO (Dempsey) pit is accessed over the HO-2490 to the HO-2400 to the Baker Lake road. Please see the vicinity map.

- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

No.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

- c. How many parking spaces would the completed project have? How many would the project eliminate?

None.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Yes. See question A-11 of this checklist for the background description of this completed proposal, which includes a road summary. A complete detailed road plan is available upon request at the DNR region office.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

No impacts are expected.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

It is estimated that 16 trips per day would occur during active logging operations. Once the logging has been completed, no new vehicular trips will be necessary except for periodic road maintenance and stand assessments/maintenance.

- g. Proposed measures to reduce or control transportation impacts, if any:

None are planned.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

Restrict access during periods of extreme fire danger.

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

Does not apply.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.

Does not apply.

C. **SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: _____ Date: _____
Title